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Psychological distress and prejudice following terror attacks in France

Short title: Distress and prejudice

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Psychological distress and prejudice following terror attacks in France

Abstract

Terrorist attacks have the capacity to threaten our beliefs about the world, cause distress across populations and promote discrimination towards particular groups. We examined the impact of two different types of attacks in the same city and same year on psychological distress and probable posttraumatic stress symptoms, and the moderating effects of religion or media use on distress/posttraumatic symptoms and inter-group relations. Two panel surveys four weeks after the January 2015 Charlie Hebdo attack (N= 1981) and the November 2015 Bataclan concert hall / restaurant attacks (N= 1878), measured intrinsic religiosity, social and traditional media use, psychological distress (K6), probable posttraumatic stress symptoms (proposed ICD-11), symbolic racism and willingness to interact with Muslims by non-Muslims. Prevalence of serious mental illness (K6 score > 18) was higher after November 2015 attacks (7.0 % after the first attack, 10.2% the second, $\chi^2 (1) = 5.67, p < .02$), as were probable posttraumatic stress symptoms (11.9% vs. 14.1%; $\chi^2 (1) = 4.15, p < .04$). In structural equation analyses, sex, age, geographic proximity, media use and religiosity were associated with distress, as was the interaction between event and religiosity. Distress was then associated with racism symbolism and willingness to interact with Muslims. Implications are considered for managing psychological trauma across populations, and protecting inter-group harmony.

Introduction

France suffered two major terrorist attacks during 2015, both attributed to Islamist groups. The first, in January, targeted the Paris-based satirical magazine Charlie Hebdo, killing 12 people, and was claimed as a response to the publication of satirical cartoons. In the second, November attack, marauding gunmen and suicide bombers attacked the Bataclan concert hall and restaurants in the multicultural central district of Paris and its northern suburb St. Denis, killing 130. There are different possible outcomes of these events for psychological well-being and intergroup relations. From an inoculation approach, the first attack hardened French citizens against further terror events, weakening the impact of a second terror event (Bleich et al., 2003). An alternative, dose-response approach suggests the larger, apparently 'motiveless' second attack challenged an "assumptive" view of the world as a safe, benevolent place (Janoff-Bulman., 1992), and had more severe psychological consequences. Further factors may have moderated stress responses. Those living closer to the attack may be more affected (Canetti-Nisim et al., 2009); indirect exposure via the media may also amplify distress (Goodwin et al., 2015), while individual religiosity may help individuals cope with mortality threat (Fischer, 2006). Distress in turn has been associated with increased prejudice and exclusionist attitudes (Canetti-Nisim et al., 2009). We tested relationships between the event, location, media exposure and religiosity and distress, and associations between distress, racism and social interaction following each attack.

Materials and Methods

We employed similar survey and sampling methods following each study (January 2015 – study 1, November 2015– study 2). A major survey company was asked to collect data during a 7-day period four weeks after each attack, drawing on an established internet panel of almost half a million participants across France. For each event samples were drawn from an existing panel using random stratified sampling methods, and included respondents from across France, using weights for key demographic

elements (age, sex) that were compared with French census information to create a reliable approximation of a representative sample. All respondents were aged over 18. We obtained a good approximation of the general population. The median age of our sample was 43 (Mean 41.2), versus a national population median of 41.2 in 2015 (Statista, n.d). 52.8% of our sample was female, compared to 51.5% of the national population in 2016 (INSEE, 2017).

The Charlie Hebdo shootings and associated attacks took place from 7-9th January 2015. In study 1, during the week of 8th February 2015, 6059 survey panel members were sent a web-link of which 2421 clicked through to the survey. 1981 (82%) of these passed a validation question and responded fully. A month after the November mass attacks 2015 (week of December 13, 2015) 2612 panel members were sent the web link, of whom 1878 passed a validation question and participated fully (response rate 72%). There were no significant differences between the two samples in terms of age (M_s 41.16 vs. 41.14, $t(3858) = .05$ $p = .96$), sex (52% vs. 54% female, $\chi^2(1) = .75$ (.40)), or percentage Muslim (2.9% vs. 3.7%, $\chi^2(1) = 2.07$ (.17)), although there was deliberate over-sampling within Paris in the first sample compared to the second (33.7% vs. 17.8% were from Paris: $\chi^2(1) = 126.4$ (.001)). Ethical approval was obtained from the Ariel University School of Social Work Ethics Committee (Study 1) and Ariel University and the University of Warwick (Study 2). Following a description of the study the first question of the survey provided an item requiring informed consent prior to continuation.

Measures

Psychological distress was assessed by two measures: the six item Kessler Psychological Distress Scale (K6) (Kessler et al., 2008) (5-point scale; Study 1 $\alpha = .91$; Study 2 $\alpha = .91$) and the proposed ICD-11 PTSD criteria (6 items on a 5-point scale, Study 1 $\alpha = .93$; Study 2 $\alpha = .91$) to measure probable posttraumatic stress symptoms (Cloitre et al., 2013). Consistent with other studies of terrorism (Canetti-Nisim et al., 2009) psychological distress was assessed primarily using total scale scores. Questions for both measures specifically asked 'how often you

have felt this since the attacks'. Media use was indicated by six items requesting the sources used to learn about each attack (divided into traditional media (TV, radio, newspapers) and social media (Facebook, Twitter, YouTube)). For each of the six items, respondents indicated whether or not this media was a major source of information about each attack (yes or no). Summed scores then formed indices of multiple use of traditional / social media. Intrinsic religiosity was assessed using the three intrinsic religiosity items from the Duke Religiosity scale (Koenig & Büssing., 2010: e.g. 'My religious beliefs lie behind my whole approach to life'; 5-point scale, study 1 $\alpha = 0.90$; study 2 $\alpha = 0.91$). Willingness to interact with Muslims by non-Muslims was measured using a modified Social Distance scale (Bogardus, 1925), indicating readiness to interact with Muslims in six theoretical relationships (as occasional contact, business partner, guest to the home, close friend, boyfriend/girlfriend, or marital partner) (5-point scale from '1' not at all to '5' very much; Study 1 $\alpha = .94$; Study 2 $\alpha = .95$). Racism towards Muslims by non-Muslims was examined through seven modified items of the Symbolic Racism scale (Henry & Sears., 2002) (e.g. "if Muslims would only try harder they could be just as well off as Christians (4-point scale, strongly disagree to strongly agree) (Study 1 $\alpha = 0.76$; Study 2 $\alpha = .72$)).

Analytic Strategy

A validity question to test those paying attention led to the removal of 1.2% respondents in the first survey, 1.3% in the second. For analyses concerning racism and willingness to associate with Muslims we removed Muslim respondents from the analyses (3.3 % of the total samples). Preliminary statistical analyses (t-tests, correlations) to compare waves and the impact of demographics on distress, racism and willingness to interact with Muslims were conducted using SPSS, v. 20 (IBM). We used Mplus (v. 7) to test two mediational models using structural equation analysis (one with K6, the other ICD-11 as mediator). In these models we included the independent variables of event, location, media use (traditional and social media) and religiosity, the interactions between event and each of the other four IVs, the mediator variable (distress), and the outcome variables of racism and willingness to interact with Muslims.

Results

Preliminary analyses

Although scores on Kessler k6 and ICD-11 were strongly correlated ($r = .70$) for completeness we report associations with both measures in the tables and supplementary materials. Risk of serious mental illness (SMI: $K6 > 18$; Quine et al, 2008) was higher after the second attack (7% after the first attack, 10.2% the second, $\chi^2(1) = 5.67, p < .02$); prevalence of probable posttraumatic stress symptoms (at least one symptom from each of the 3 scale clusters) was also significantly higher after the second attack (11.9% then 14.1%, $\chi^2(1) = 4.15, p < .04$). Female respondents were higher on both indicators of distress (K6 Ms 12.48 vs. 11.03, $t(3858) = 8.98, p < .0001$; ICD-11 Ms 10.11 vs. 9.28, $t(3858) = 5.27, p < .001$). Age was negatively associated with both assessments of distress (K6: $r(3860) = -.03, p = .04$; ICD-11 $r(3860) = -.07, p < .0001$).

Respondents were more willing to engage in superficial relationships or friendships with Muslims than accept them as relationship partners (Ms 3.66 (SD 1.32) vs. 2.72 (SD 1.56), $t(3665) = 48.36, p < .001$). Older respondents were less willing to engage socially with Muslims ($r(3666) = -.10, p < .0001$), and expressed higher levels of racism ($r(3666) = .16, p < .0001$); sex was not associated with social distance ($t(3664) = 1.06, p = .29$) although there was a small association between sex and racism, with men higher on this indicator ($t(3664) = 2.03, p = .04$). Respondents living outside of Paris were overall less willing to interact with Muslims than residents of Paris ($t(3664) = 2.45, p = .01$), although there was a significant interaction between event and location on willingness to engage with Muslims ($F(1, 3662) = 6.28, p = .01$; Fig. S2). This lesser willingness to engage with Muslims following the second attack was most evident for intimate relationships (close friends and romantic partners) (Supplementary Figures 3a-e). There were no significant differences for location on racism ($t(3664) = .40, p = .69$), or interaction between event and location.

Structural model

A summary model of the association between event, location, media use and religiosity and distress, and distress and racism and willingness to engage with Muslims, is reported in Figure 1. Distress was greater following the second (Bataclan) attack, amongst those living in Paris, for both traditional and social media users, and amongst those who were more intrinsically religious. There was also an interaction between event and religiosity (figure 2), with the less religious significantly more distressed in the aftermath of the November event (Figure 2). There were no significant associations between distress and event x location, or event x media use. Psychological distress was then associated with less willingness to interact with Muslims, and greater racism.

Discussion

While perpetrated by similar terror groups, two major terror attacks in France in 2015 had very different scopes. Comparing surveys conducted four weeks after each attack on Paris we find evidence of greater distress following the second attack, suggesting that French citizens had not been ‘inoculated’ or habituated by the first attack against the broader attack ten months later. Our findings therefore support a ‘dose response’ model of reactions to mass shooting. Although there was similarity in the weight of those factors predicting distress, we provide significant new insights into the associations between religiosity, media use and distress, and the role of event and location on racism and willingness to have relations with the religious group most associated with these attacks.

Large-scale terror attacks can shatter our everyday meaning structures (Janoff-Bulman, 1992; Pyszczynski et al., 2015), and, by suggesting we live in a hostile world (Shrira et al., 2011), overwhelm our usual distress-buffering mechanisms and lead to long-lasting distress (Pyszczynski et al., 2015). Rates of probable posttraumatic stress symptoms in our study using recent ICD 11 criteria were 11.9/14.1% for the two attacks. These were higher than prevalence of 9.4% during a period of pronounced terror in Israel (Bleich et al., 2003) and 7.5% recorded amongst New York residents after 9/11 (15), although it is important to realise that diagnostic criteria had changed. Repeated exposure to mass stressors can have

a cumulative toll on psychological well-being (Holman et al., 2014). However, several factors may influence this process. As elsewhere, women proved particularly vulnerable to distress after each of the attacks (Bleich et al., 2003). Younger people were more distressed, potentially the result of maturation processes that generally favour older adults (Shrira et al., 2014). Physical location was related to distress, with those in the 'bulls eye' of the attacks (Parisians) more distressed regardless of the event. Uptake of media was also associated with greater stress, with this effect also stronger in Paris. While traditional media were used more frequently after each of these attacks the association between distress and the use of multiple new media for information was stronger, resonant of research following other disasters (Goodwin et al., 2015). Social media use is more interactive and personal, and permits the rapid spread of misleading information. Switching between social media may be taxing following a significant stressor (Rosen et al., 2013), although it is notable that such indirect exposure is excluded as a criterion for stressor A in DSM-5. Findings suggest the need for therapeutic interventions that target social media use amongst those most vulnerable to distress, including those with underlying distress disorders. Where such media is used, concerned officials might provide information on formal assistance mechanisms and encourage self-efficacy to promote resilience (Hobfoll et al., 2006).

Religiosity is frequently interpreted as providing meaning in life, and through a belief that 'death is not the end', can provide a sense of security (Fischer, 2006). We were therefore surprised by the positive relationship between intrinsic religiosity and distress in our data, a finding evident after both attacks. One reason could be that religiosity was simply not important for our respondents: only 11% said it was true that they 'tried to carry their religion into their life in general', 18% that their 'religious views were behind their whole approach to life'. However, while almost half (45%) of our respondents overall claimed they had no religion, there was no difference in the association between distress and intrinsic religiosity in those who claimed no religion ($r(1685) = .18$) versus those who claimed a religion ($r(2105) = .15$). A second possible explanation could be the strong religious connotations of these

attacks: traditional religiosity was related to PTSD in an Israeli study during the Al Aqsa Intifada (Hobfoll et al., 2008). The first attack was followed shortly afterwards by a hostage taking in a religious (kosher) supermarket in east Paris. Claiming responsibility for the second attack, the Islamic State group condemned the concert-goers as “pagans”. Religious people often value empathy, sense of communion and love for others, and both communal and national security (Slone, 2000). This may have been violated by these events.

As in many European countries, France has a sizeable Muslim population (4.7 million, or approximately 7.5% of the total population) (Pew Research, 2015). According to terror management researchers an unwillingness to interact with a perceived out-group represents a regular defense or threat buffer when faced with threats to mortality. While racism did not increase in our data between the two attacks, those who were anxious were less willing to interact with an apparently threatening group, and were more likely to exhibit racist attitudes (Morgan et al., 2011). This is consistent with work in Israel finding PTSD symptoms to be positively related to the endorsing of ethnic exclusionism (Hobfoll et al., 2006), particularly through a pathway where psychological distress influences perceived threat which then influences exclusionism (Canetti-Nisim et al., 2009). The findings of our study underline the dangers of stigmatization and behavioral distancing following terror incidents, particularly amongst the most distressed: indeed, this distress may be more significant than exposure in forming exclusionist attitudes (Canetti-Nisim et al., 2009). Such effects may persist a year after a terror event (Canetti-Nisim et al., 2009). Notably, it took the second attack before there was greater unwillingness to interact with Muslims in multi-cultural Paris, suggesting familiarity or proximity to different ethnic groups may ameliorate this process, at least until the threat has greater personal immediacy. This was particularly the case for willingness to form more intimate relationships with the group most associated with these events. This emphasizes the need for public interventions that help address this distress and sense of existential insecurity (Canetti-Nisim et al., 2009).

We recognize a number of limitations with our study. We use a cross-sectional design which means that we cannot assert casual links between psychological distress, media use, religiosity and relations with Muslims. Indeed, trauma may increase a sense of religiosity (Shaw et al., 2005); opportunities for world-view defense (such as stigmatizing an out-group) may reduce distress (Julh & Routledge., 2016). As others have recognized, there is probably a recursive relationship between media use and distress following terror events (Garfin et al., 2015). We cannot be sure if it was the presence of a series of events that led to higher levels of distress after the second attack (a cumulative factor), or the sheer size and scope of the latter attack. We also recognize potential response bias in our pre-established panel sample and lack of assessment of participants for underlying disorders. Data were self-report, and other measures of post-disaster activity (e.g. media diaries) would be valuable. Non-respondents may include those socially adept individuals working longer hours, as well as those who refused due to their greater distress. Future work might explore further moderators of the association between exposure to collective trauma and psychological distress, such as self-worth (Julh & Routledge., 2016) and include media dosage, and the specific media output sourced (e.g. news broadcasts) to estimate the relative cumulative impact of each source. This may allow a more direct test of a sensitization hypothesis, linking cumulative exposure to a threat to increased likelihood of acute stress responses following multiple events (Garfin et al., 2015).

Our study was conducted during 2015. The following year saw a number of major political events, most notably the victory of Donald Trump in the U.S., the election of popularist parties in Europe, and BrExit in the UK. All have been associated with movement towards isolationism and intolerance. In the US, Donald Trump promised protectionist policies following the Paris attacks, including a ban on Muslim immigration (Albertson & Gadarian, 2016). In 2016, three of the four Visegrád countries of Central Europe (Poland, Hungary and Slovakia) were governed by populist parties that promoted anti-migrant policies (Bugarič & Ginsburg, 2016). Post the EU referendum, Bhui (2016) describes a “culture of extremism and intolerance” and rising “stigma, prejudice and discrimination” (p. 181), all of which are positively associated with poor mental

health. All these underline the need for psychiatry researchers to address the implications for mental health of a rapidly shifting social and political environment.

A desire to increase population distress, and create divisions across religions and broader social groups, is often seen as a prime motivator for terror attacks. Our studies suggest that there is little inoculation benefit from one attack to another if these attacks are of different range and target seemingly different populations. Apparently random attacks on the streets, with no simple priority for targets, can cause widespread distress. Psychological resources, such as religiosity, may provide less relief than previously thought while multiple media use, particularly social media use, may serve to increase distress. Proximity to an attack may be an important predictor of response, not least as this interacts with the scope of the event to help predict willingness to engage with an out-group. Understanding such predictors of response to terror attacks is likely to be important in helping reduce distress amongst a population. Interventions based on these factors can then help enable community relations – and in doing defeating a major objective of these terror groups.

Author contributions

Robin Goodwin and Menachem Ben-Ezra developed the study concept, contributed to the study design and supervised the data collection. Robin Goodwin, Shaojing Sun and Krys Kaniasty performed the data analysis under the supervision of Sun. Robin Goodwin, Krys Kaniasty and Menachem Ben-Ezra provided crucial revisions. All authors approved the final version of the manuscript.

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Tables and Figures

Figure 1: Psychological distress by location and event

Figure 2: Interaction of Event by Religiosity on Psychological Distress

Figure 3. Modelling Distress and Relationships with Muslims. Note. Summary model based on both attacks. Numbers are standardized regression weights for attack 1, attack 2. For the first attack Chi-square=98.645, df=22, chi/df=4.484, GFI=.989, CFI=.921, IFI=.922, RMSEA=.043, SRMR=.039. For the second attack Chi-square= Chi-square=92.974, df=22, chi/df=4.226, GFI=.988, CFI=.917, IFI=.918, RMSEA=.043, SRMR=.039. Only paths significant at $p < .01$ are included (age, location excluded). Total N=3666.

Table 1: Predictors of Post-Attacks Psychological Distress. *Note.* The entries are R^2 changes at each step of the regression equation, standardized (β) coefficients obtained when the variable was first entered, and the adjusted R^2 for the entire regressions model (df = 11, 3848). * $p < .05$. ** $p < .01$. *** $p < .001$

Table 2: Predictors of Post-Attacks Attitudes Towards Muslims (n= 3666). *Note.* The entries are R^2 changes at each step of the regression equation, standardized (β) coefficients obtained when the variable was first entered, and the adjusted R^2 for the entire regressions model (df = 12, 3653). † $p < .055$. * $p < .05$. ** $p < .01$. *** $p < .001$

Supplementary Materials.

Suppl 1: Probable posttraumatic stress symptoms by location and event. Note. Error bars

Suppl 2: Willingness to interact with Muslims by event

Suppl 3(a-e): Interactions between Willingness to engage with Muslims and attack (by level of interaction).

Suppl 4: Probable posttraumatic stress symptoms mediator model. Note. Modelling ICD total score (PTSD) and Relationships with Muslims. Summary model based on both attacks. Numbers are standardized regression

weights for attack 1, attack 2. For the first attack Chi-square=101.10, df=22, chi/df=4.60,

GFI=.989, CFI=.922, IFI=.923, RMSEA=.044, SRMR=.04. For the second attack Chi-square=

Chi-square=94.45, df=22, chi/df=4.29, GFI=.988, CFI=.921, IFI=.922, RMSEA=.04,

SRMR=.04. Only paths significant at $p < .01$ are included (age, location excluded). Total

N=3666.